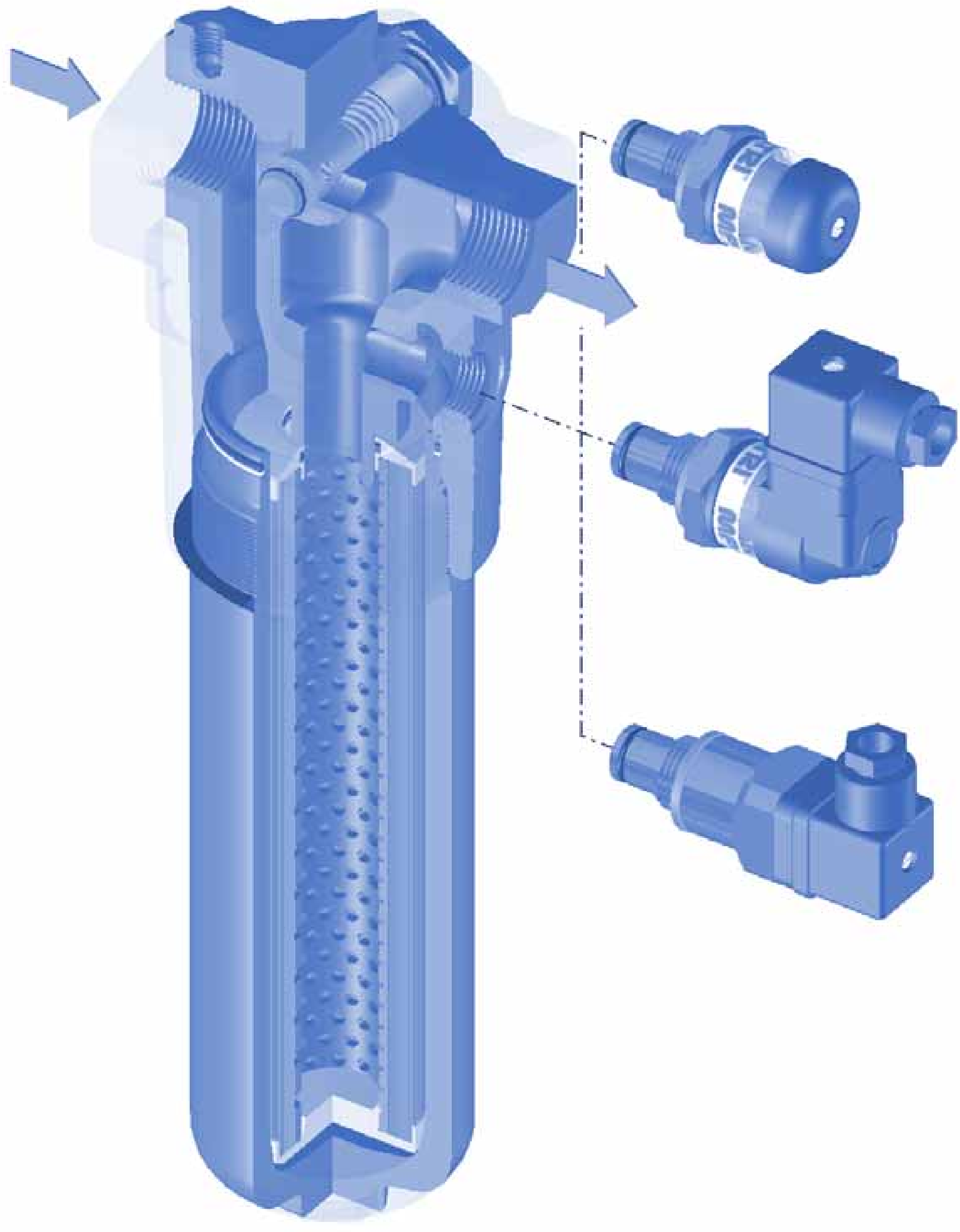
FHP

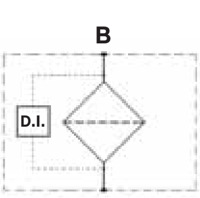


SERIES FHP

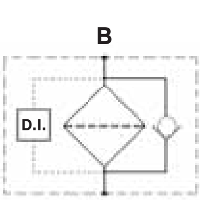
Working pressure 420 bar



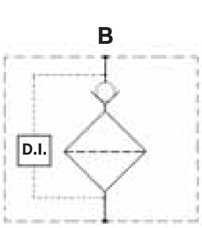
Style S



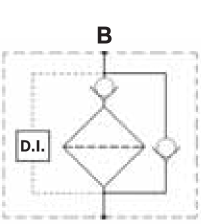
Style B



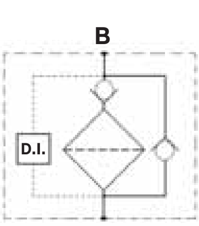
Style T



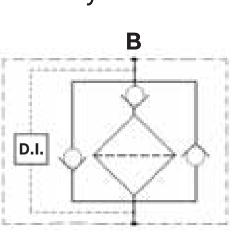
Style D



Style V



Style Z



Technical data

Filter body (Materials)

- Head: Cast iron (chemical heat treatment)
- Housing: Steel (chemical heat treatment)
- Bypass valve: Brass
- Reverse Flow: Steel (only for series 320)

Pressure

- Maximum operating pressure: 420 bar (42 MPa)
- Test pressure: 630 bar (63 MPa)
- Burst pressure: 1250 bar (125 MPa)
- Pulsed pressure fatigue test 1,000,000 of cycles with pressure from 0 to 420 bar (42 MPa)

Temperature

- From -25°C to +110°C

Bypass valve

- Opening pressure 6 bar ±10%
- Other opening pressures on request.

Elements type Δp

- Elements in microfibre series N-R: 20 bar
- Elements in microfibre series H-S: 210 bar
- Elements in stainless steel mesh series N: 20 bar
- Oil flow from exterior to interior.

Seals

- Standard Nitrile (NBR) series A
- Optional FPM series V

Weights without filter elements (kg.)

Length	1	2	3	4
• FHP 065	3.9	4.2	5.7	—
• FHP 135	7.5	9.4	12	—
• FHP 320/321	14.5	16.5	22.5	25.5

Filter internal volumes (dm³)

Length	1	2	3	4
• FHP 065	0.35	0.40	0.60	—
• FHP 135	0.55	0.85	1.20	—
• FHP 320/321	1.25	1.95	2.80	3.50

Connections

In-line Inlet/Outlet
Style FHP 321 inlet/outlet 90°

Compatibility

- Bodies compatible with:
  Mineral oils to ISO 2943 - aqueous emulsions
  Synthetic fluids, water/glycol.
- Filter elements compatible with:
  Mineral oils to ISO 2943 - aqueous emulsions
  Synthetic fluids, water/glycol.
- Nitrile (NBR) seals series A, compatible with:
  Mineral oils to ISO 2943 - aqueous emulsions
  Synthetic fluids, water/glycol.
- V series FPM seals, compatible with:
  Synthetic fluids type HS-HFDR-HFDS-HFDU.
  To ISO 2943

Filter Element Area

Filter element in stainless steel mesh

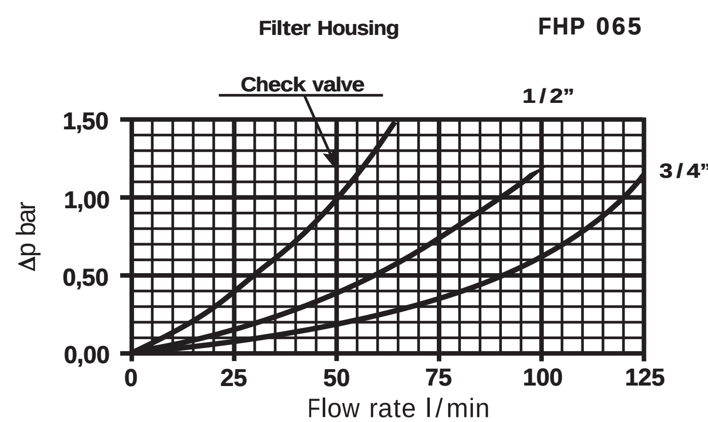
Type	Length 1	2	3	4
HP065	374	530	1064	-
HP135	950	2020	2700	-
HP320	1650	3645	5970	8280

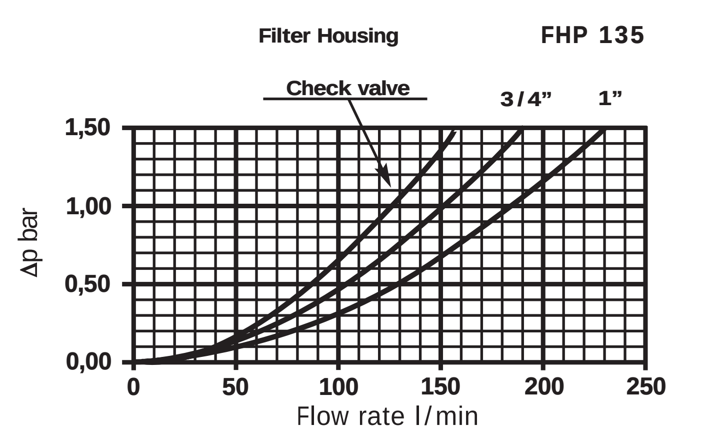
Values expressed in **cm²**

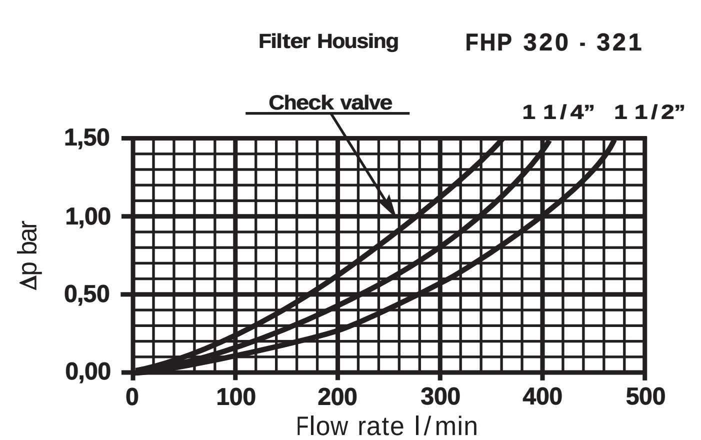
Pressure drops Δp Housing

The curves are plotted using mineral oil with density of 0.86 kg/dm³ to ISO 3968.

Δp varies proportional with density.

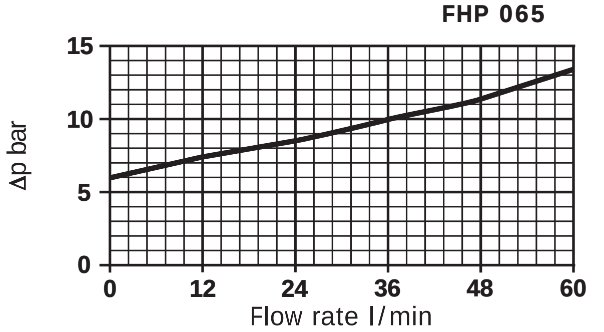


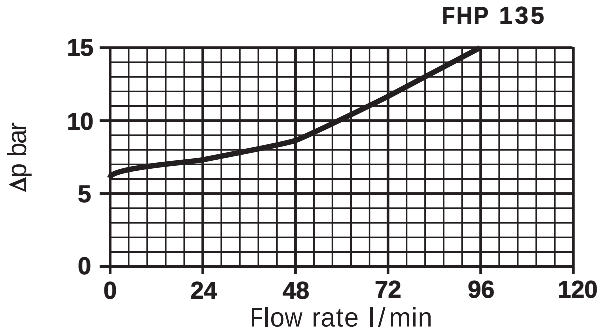


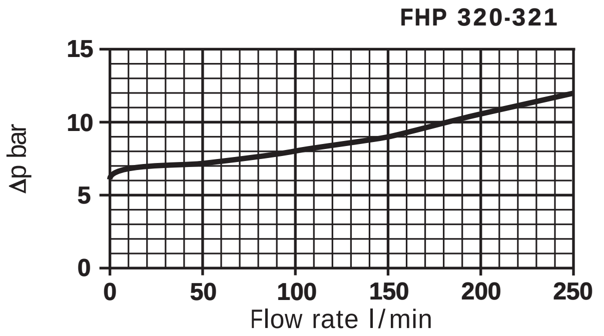


Valves

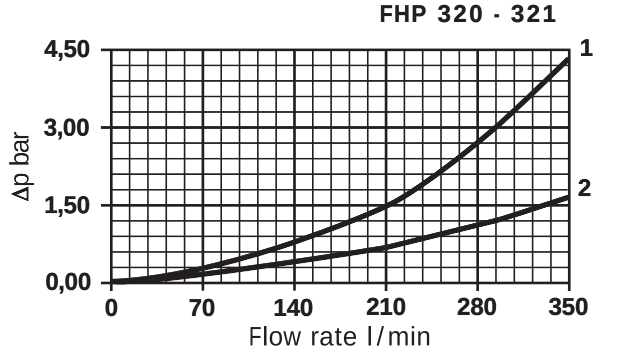
Pressure drop in bypass valve





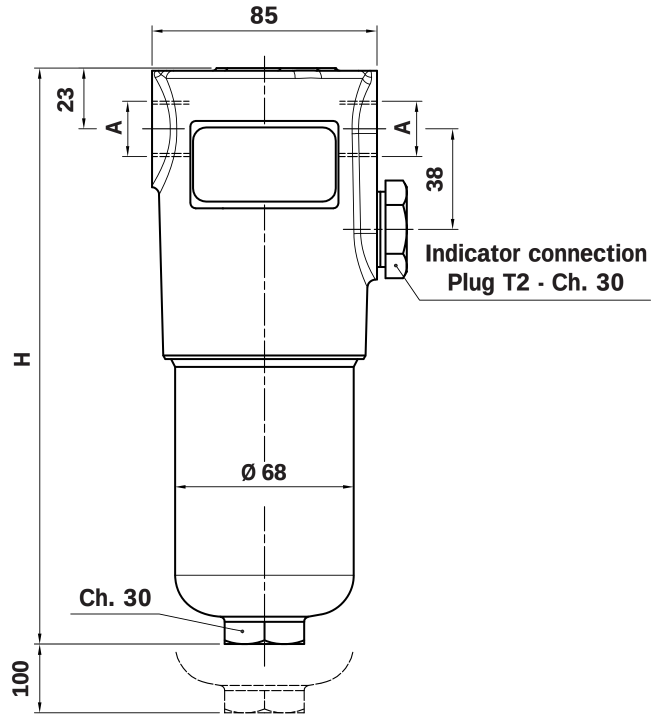


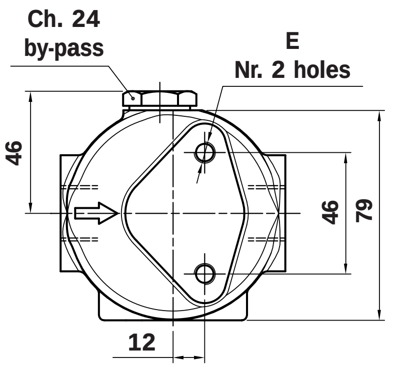
Pressure drop in reverse flow valves



1 - Reverse Flow
2 - In filter direction

FHP065





Recommended maximum flow rate

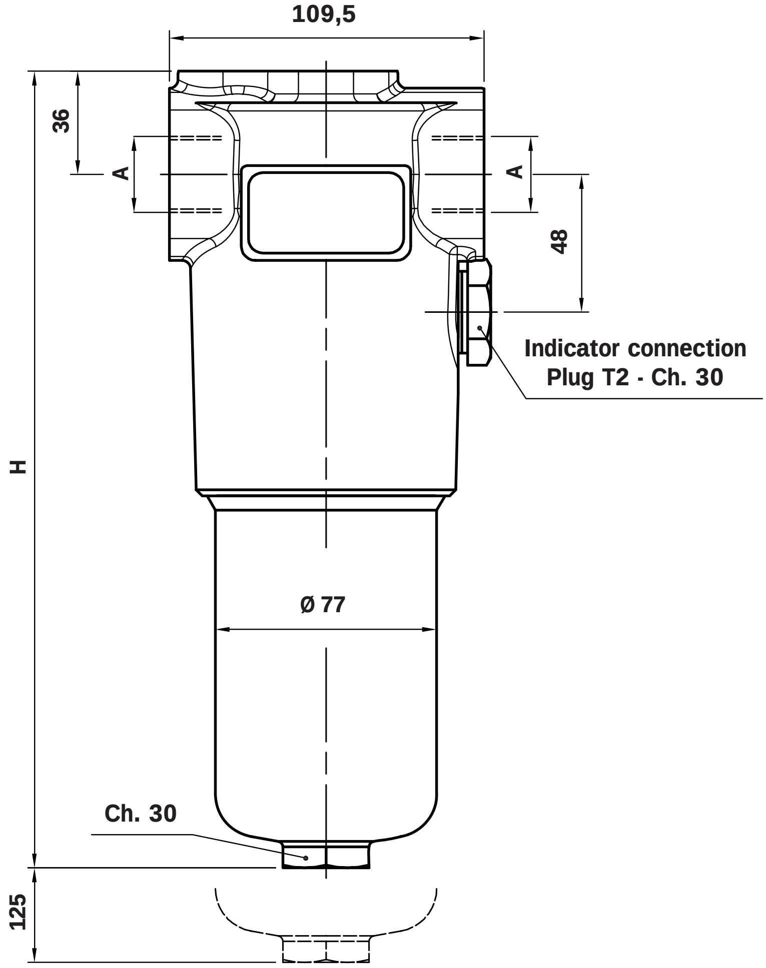
- Pressure drop of complete filter equal to Δp 1.5 bar.
- Oil kinematic viscosity 30 mm^2/s (cSt).
- Density 0.86 kg/dm^3.
- Connections of filter under test G 3/4”.

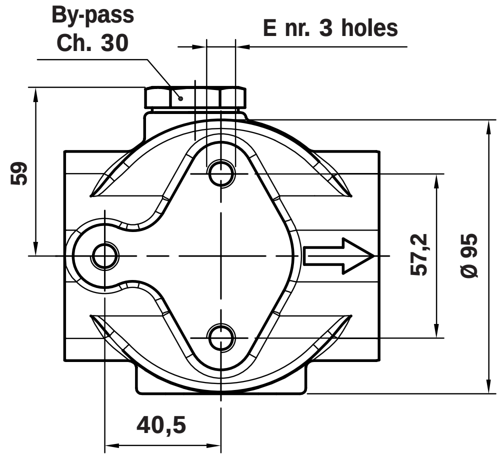
Filter element type	Flow rate l/min Series N	Flow rate l/min Series H	Filter Length
A03	23	22	1
A06	30	23	
A10	48	43	
A16	53	50	
A25	72	68	
M25	105	-	
A03	31	30	2
A06	45	35	
A10	60	57	
A16	64	63	
A25	82	77	
M25	106	-	
A03	53	52	3
A06	61	58	
A10	79	78	
A16	84	83	
A25	94	93	
M25	108	-	

A Threaded Connections	E Depth 15 mm
G 1/2”	M8
G 3/4”	M8
1/2” NPT	5/16“ UNC
3/4” NPT	5/16“ UNC
SAE 8 (3/4”- 16 UNF)	5/16“ UNC
SAE 12 (1 1/16”- 12 UN)	5/16“ UNC

Filter Length	H mm
1	200
2	230
3	330

FHP135





Recommended maximum flow rate

- Pressure drop of complete filter equal to Δp 1.5 bar.
- Oil kinematic viscosity 30 mm²/s (cSt).
- Density 0.86 kg/dm³.
- Connections of filter under test G 1".

Filter element type	Flow rate l/min Series N	Flow rate l/min Series H	Filter Length
A03	69	50	1
A06	74	57	
A10	120	98	
A16	129	101	
A25	171	156	
M25	200	-	
A03	110	91	2
A06	117	110	
A10	148	136	
A16	151	139	
A25	208	175	
M25	230	-	
A03	150	126	3
A06	153	140	
A10	192	170	
A16	195	179	
A25	213	196	
M25	232	-	

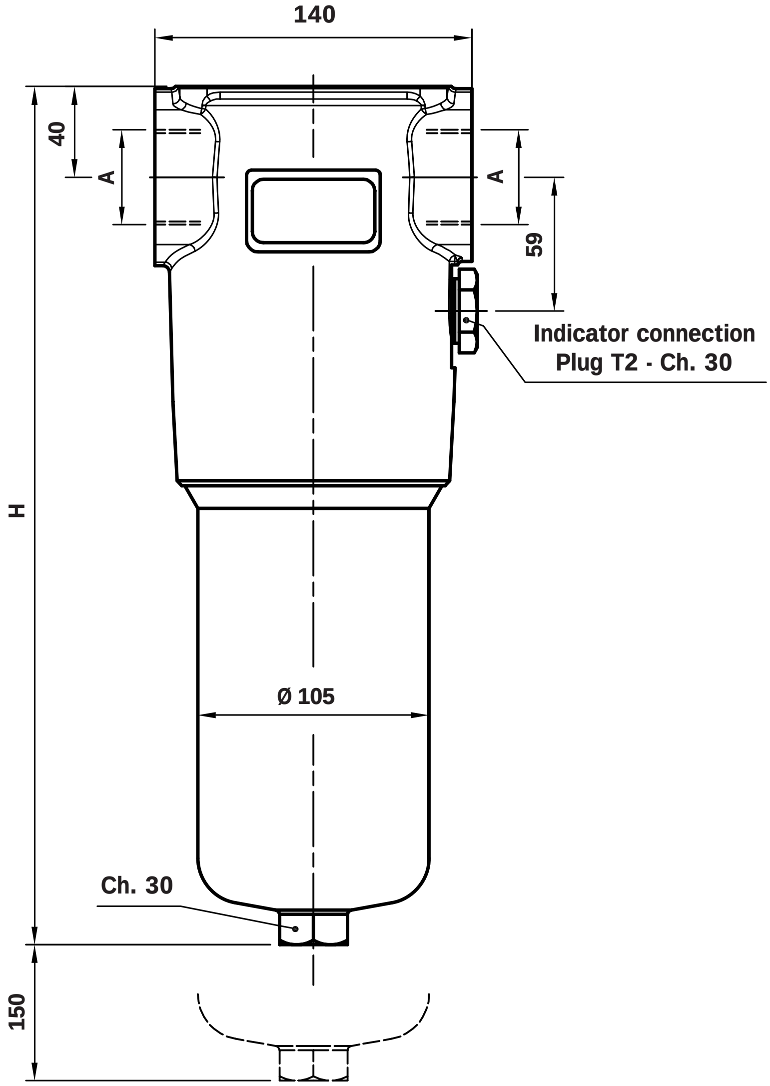
A Threaded Connections	E Depth 15 mm
G 3/4"	M10
G 1"	M10
3/4" NPT	3/8" UNC
1 NPT	3/8" UNC
SAE 12 (1 1/16"- 12 UN)	3/8" UNC
SAE 16 (1 5/16"- 12 UN)	3/8" UNC

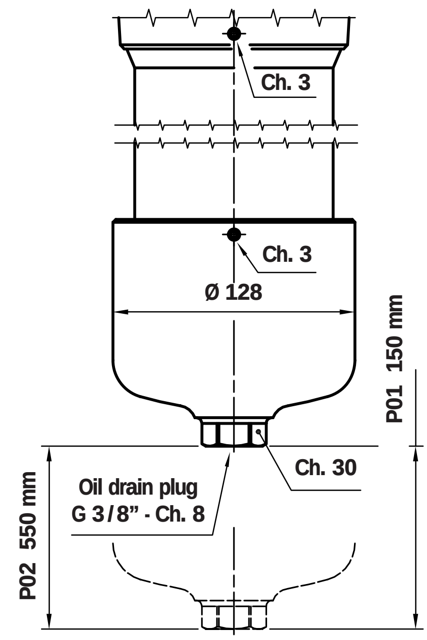
A Flanged Connections	E Depth 15 mm
3/4" SAE 3000 psi/M	M10
1" SAE 3000 psi/M	M10
3/4" SAE 3000 psi/UNC	3/8" UNC
1" SAE 3000 psi/UNC	3/8" UNC
3/4" SAE 6000 psi/M	M10
3/4" SAE 6000 psi/UNC	3/8" UNC

Filter Length	H mm
1	260
2	373
3	448

FHP320 / 321

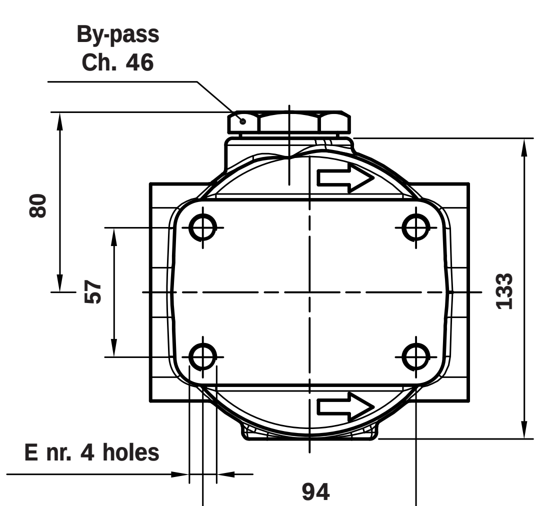
Only for FHP 320 length 4



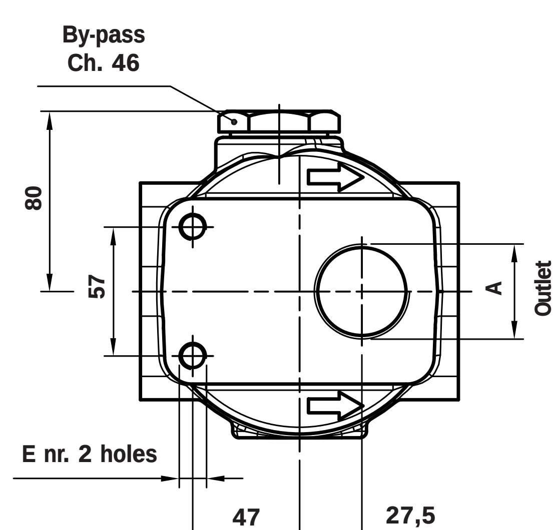


Style P01 standard maintenance from head.
Style P02 maintenance option from housing base.

FHP 320



FHP 321
Top Outlet



Recommended maximum flow rate

- Pressure drop of complete filter equal to Δp 1.5 bar.
- Oil kinematic viscosity 30 mm^2/s (cSt).
- Density 0.86 kg/dm^3.
- Connections of filter under test G 1 1/2".

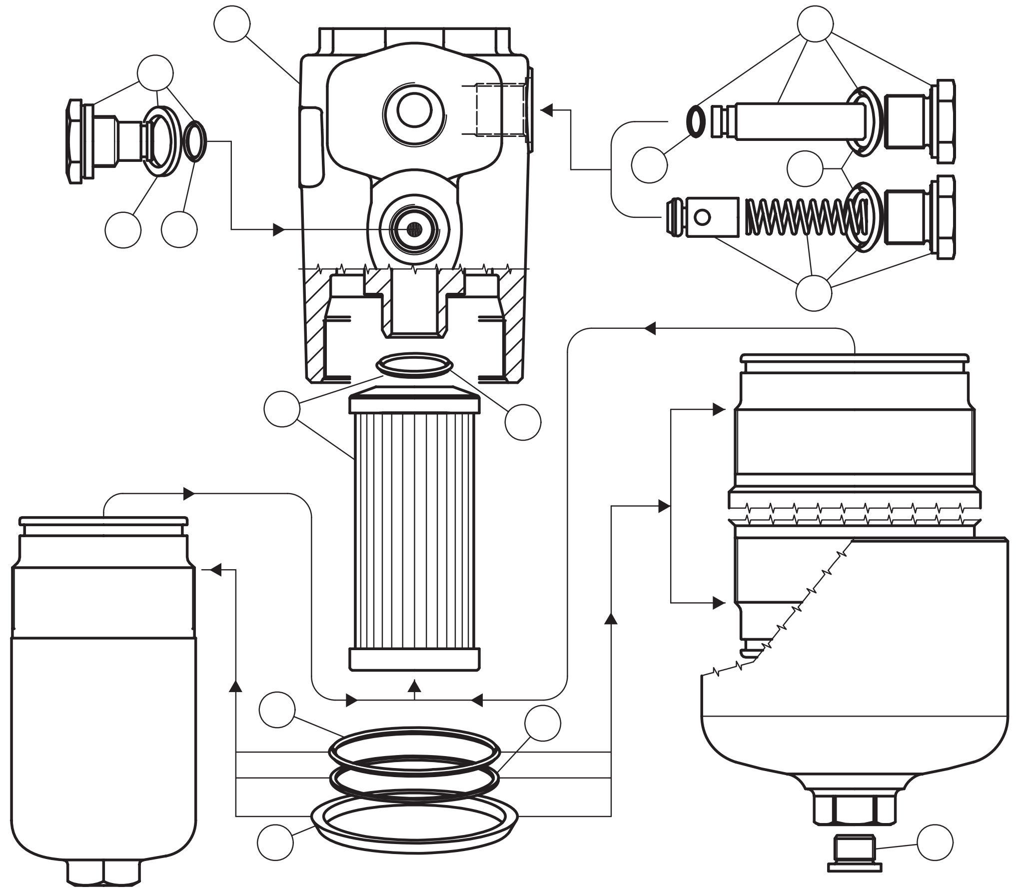
Filter element type	Flow rate l/min Series N	Flow rate l/min Series H	Filter Length
A03	126	107	1
A06	137	112	
A10	230	185	
A16	274	193	
A25	330	292	
M25	425	-	
A03	248	192	2
A06	270	220	
A10	376	300	
A16	395	312	
A25	440	378	
M25	445	-	
A03	319	255	3
A06	353	300	
A10	427	367	
A16	440	375	
A25	450	417	
M25	465	-	
A03	354	298	4
A06	375	320	
A10	430	375	
A16	447	382	
A25	467	422	
M25	475	-	

A Threaded Connections	E Depth 15 mm
G 1 1/4"	M12
G 1 1/2"	M12
1 1/4" NPT	1/2" UNC
1 1/2" NPT	1/2" UNC
SAE 20 (1 5/8"- 12 UN)	1/2" UNC
SAE 24 (1 7/8"- 12 UN)	1/2" UNC

A Flanged Connections (For FHP 320)	E Depth 15 mm
1 1/4" SAE 3000 psi/M	M12
1 1/2" SAE 3000 psi/M	M12
1 1/4" SAE 3000 psi/UNC	1/2" UNC
1 1/2" SAE 3000 psi/UNC	1/2" UNC
1 1/4" SAE 6000 psi/M	M12
1 1/4" SAE 6000 psi/UNC	1/2" UNC

Filter Length	H mm
1	298
2	422
3	554
4	709

Spare parts FHP



Pos.	Description	Qty.	FHP Series FILTER					
			065 1 - 2 - 3		135 1 - 2 - 3		320 1 - 2 - 3 - 4	
1	Complete filter	1	See order table					
2	Filter element	1	See order table					
3	Bypass assembly	1	02001116 (NBR) 02001136 (FPM)		02001117 (NBR) 02001137 (FPM)		02001118 (NBR) 02001138 (FPM)	
4	Non bypass assembly	1	02001142 (NBR) 02001139 (FPM)		02001143 (NBR) 02001392 (FPM)		02001144 (NBR) 02001395 (FPM)	
5	Seal kits	1	NBR 02050265	FPM 02050276	NBR 02050269	FPM 02050280	NBR 02050272	FPM 02050283
5a	Filter element O-Ring	1	OR 4100 Ø 24.99 x 3.53		OR 3106 Ø 26.65 x 2.62		OR 144 Ø 39.69 x 3.53	
5b	O-Ring for housing	1	OR 159 Ø 55.56 x 3.53		OR 3256 Ø 64.77 x 2.62		2 pcs.	OR 3350 Ø 88.57 x 2.62
5c	Anti-extrusion ring	1	Parbak 227 Ø 54.53 x 3		Parbak 144 Ø 63.96 x 2.18		2 pcs.	Parbak 153 Ø 89.36 x 2.18
5d	Gasket	1	01030058 (HNBR)	01030046 (FPM)	01030058 (HNBR)	01030046 (FPM)	01030058 (HNBR)	01030046 (FPM)
5e	O-Ring	1	O-R 2050 Ø 12.42 x 1.78					
5f	Bp or Non Bp O-Ring	1	OR 121 Ø 15.88 x 2.62		OR 3087(NBR 90 Sh A) Ø 21.89 x 2.62		OR 3143 (NBR 90 Sh A) Ø 36.14 x 2.62	
5g	Bp or Non Bp O-Ring	1	OR 2031 Ø 7.65 x 1.78		OR 2037 Ø 9.25 x 1.78		OR 2081 Ø 20.35 x 1.78	
5h	Protective seal	1	01026521		01026509		01026510	
5m	Drain plug	1	-		-		G 3/8” with seal	
6	Indicator plug	1	T2H			T2V		
-	Indicators	1	See order table					

Ordering information FHP

Filter assembly FHP	1	2	3	4	5	6	7	8a
Example: FHP	135	1	S	A	G1	A03	H	P01

Filter element HP	1	2	4	6	7	8b
Example: HP	135	1	A	A03	H	P01

1 - Size

- 065
- 135
- 320
- 321

2 - Filter length

- 1
- 2
- 3
- 4 (only for FHP 320-321)

3 - Valves

- **S** Without bypass
- **B** With bypass
- **D** With bypass + chek valve*
- **V** With Reverse Flow* (only for FHP 320)
- **Z** With Reverse Flow + bypass (only for FHP 320)
- **T** With bypass + chek valve* (only for FHP 320)

*Reduced cross-section oilways

4 - Seals

- **A** NBR
- **V** FPM

6 - Filter elements

A03	Inorganic microfibre 3 µ	ßx (c) ≥ 1000 See page 10
A06	Inorganic microfibre 6 µ	
A10	Inorganic microfibre 10 µ	
A16	Inorganic microfibre 16 µ	
A25	Inorganic microfibre 25 µ	
M25	Stainless steel mesh 25 µ (style N only)	

7 - Filter elements differential pressure

- **N** 20 bar
- **H** 210 bar
- **R** (Filter with Reverse Flow + bypass)
- **S** (Filter with Reverse Flow)

8 - Options

a) Filter

- **P01** MP Standard filters
- **P02** Maintenance from base of housing (FHP 320 - 4 only)
- **Pxx** Customer request

b) Filter element

- **P01** MP Filtri standard
- **Pxx** Customer request

5 - Connections

Type	065	135	320	321
G1	G 1/2"	G 3/4"	G 1 1/4"	G 1 1/4"
G2	G 3/4"	G 1"	G 1 1/2"	G 1 1/2"
G3	1/2" NPT	3/4" NPT	1 1/4" NPT	1 1/4" NPT
G4	3/4" NPT	1" NPT	1 1/2" NPT	1 1/2" NPT
G5	SAE 8	SAE 12	SAE 20	SAE 20
G6	SAE 12	SAE 16	SAE 24	SAE 24
F1	-	3/4" SAE 3000 PSI/M	1 1/4" SAE 3000 PSI/M	-
F2	-	1" SAE 3000 PSI/M	1 1/2" SAE 3000 PSI/M	-
F3	-	3/4" SAE 3000 PSI/UNC	1 1/4" SAE 3000 PSI/UNC	-
F4	-	1" SAE 3000 PSI/UNC	1 1/2" SAE 3000 PSI/UNC	-
F5	-	3/4" SAE 6000 PSI/M	1 1/4" SAE 6000 PSI/M	-
F6	-	3/4" SAE 6000 PSI/UNC	1 1/4" SAE 6000 PSI/UNC	-

DIFFERENTIAL INDICATORS
(see page 15)